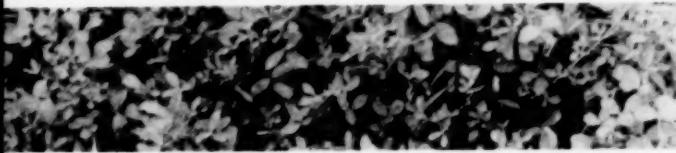


# Hay and Pasture Seedings



## for 1956

WALTER L. GRIFFETH

**T**HIS bulletin contains the 1956 seeding recommendations and suggestions to help you get and keep better fields of hay and pasture.

### CHOOSE THE BEST MIXTURE

Pick the seeding that best suits your needs. Consider your soil drainage, the intended use of the crop, and the number of years you want to keep the stand.

**Alfalfa-grass** mixtures are first choice for hay, silage, or pasture in long and short crop rotations when:

- Drainage is moderate to good.
- Lime and fertility levels are high.
- Land is neither too stony nor steep to plow when alfalfa dies out.
- Rotation grazing is practiced.

**Birdsfoot-trefoil-grass** mixtures fit a wide range of conditions in place of alfalfa-grass mixtures when:

- Drainage is a problem or land is too steep or stony to reseed frequently.
- Long-lived stands are desired for pasture, hay, or silage.
- Improving permanent pastures.

The **Narragansett-alfalfa-European birdsfoot-trefoil-grass** mixture is suggested as a substitute for alfalfa-red-clover-grass mixtures when:

- Drainage is moderate to somewhat poor.
- Stand is to be left down 3 or more years.
- Lime and fertility levels are suitable for alfalfa.

- Alfalfa is likely to be short-lived, and birdsfoot trefoil can fill in to extend the life of the stand.

The **alfalfa-red-clover-grass** mixture can be used when:

- Drainage is moderate to somewhat poor.
- A general-purpose mixture is desired for fields with variable soil drainage.
- Stand is to be left down 2 or 3 years. For longer stands, use mixture above.

The **ladino-alfalfa-grass** mixture is recommended for silage and rotationally grazed pastures when:

- Drainage is good to somewhat poor.
- A high-yielding pasture mixture is desired.
- The field may be cut for silage but probably will not be cut for hay.
- Rotation grazing is practiced.

The **short-term clover** mixture is recommended for hay, silage, or pasture when:

- Drainage is poor to somewhat poor.
- One or 2 years of forage are satisfactory.

### CHOOSE THE BEST VARIETY

Buy certified seed when available.

#### Alfalfa

**Narragansett**—most widely adapted variety for New York. Superior to Ranger in yield, stand establish-

ment, and persistence except when wilt is severe.

**DuPuits** — top-yielding variety for best alfalfa soils. Grows fast; will make three cuttings a year if lime and fertility are right.

**Ranger and Vernal** — wilt-resistant, long-lived on well-drained soils.

### Birdsfoot Trefoil

**European** — early type, well suited to hay, silage, and rotation pasture. It should replace red clover in many fields not suited to alfalfa.

**Viking** — an improved variety of the early type which has yielded 10 per cent more than European and is more winterhardy. Seed supply is very short.

**Empire** — a late-maturing type at least 2 weeks later than alfalfa, red clover, or European trefoil. First choice for long-term pasture.

### Red Clover

**Pennscott** — the best variety now available. It has higher yield and some more second-year growth than other red clovers.

Commercial seed produced in the Northeastern States is a good second choice.

### Ladino Clover

Certified seed lots are more uniform and true to type than commercial seed which may be a mixture with common white clover.

### Smooth Bromegrass

**Lincoln** and **Achenbach** are "southern" varieties that give highest yields and are most disease resistant in New York.

### Timothy

**Climax** — a leafier variety; one week later than common.

**Common** — suitable if hay is cut early.

## PREPARE THE SOIL

Low fertility and acid soils are still the most common causes of poor hay and pasture crops.

**Lime** — Be sure your soil is limed to the correct pH for the legume you want to grow. The best pH for alfalfa is from 6.5 to 6.8; for other legumes the pH should be from 6.2 to 6.5.

**Fertilizer** — Fertilize the small grain and forage seeding at planting time. Topdress established forage stands every year with manure or commercial fertilizer. Read Cornell Extension Bulletin 780, **Fertilizers for Field Crops, 1956**, for recommendations.

**Seedbed** — A fine, firm seedbed is needed (finer than for grain crops alone) since it is impossible to get uniform shallow seed placement when the soil is rough and cloddy.

## PLANT SHALLOW

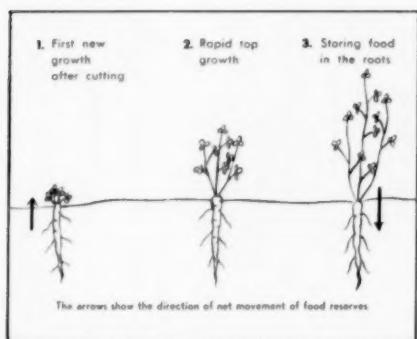
From  $\frac{1}{4}$  to  $\frac{1}{2}$  inch of coverage results in the best stands;  $\frac{3}{4}$  inch is the deepest that any of the seeds should go. The tiny legume and grass seeds are not able to send sprouts very far through the soil.

- Band seeding helps to insure shallow seeding as well as a concentration of fertilizer near (but not in contact with) the forage seeds.

## FALL CUTTING OR PASTURING?

August rains following a long summer drouth caused seedlings to grow rapidly and many farmers asked, "Can I cut alfalfa in September? Can I cut or pasture my new seedlings?"

What is the answer? There is real danger of damaging forage legumes by removing the top growth in early fall. Legumes live through the winter and make their first 6 to 12 inches of spring growth on food



stored in their roots the previous fall. The reserve of stored food in the roots is built up at certain times during the growing season, but not continuously throughout spring, summer, and fall.

When growth starts in the spring or new growth is formed after cutting or grazing, the plant draws on the reserve supply of food stored in the roots. During the first few weeks, most of the growth is made on the stored foods. As the size and number of leaves increases, the plant manufacturers more and more of the food needed for growth and soon has a surplus of food. The surplus food is stored in the roots as a reserve for future new growth. Each time the legume crop is cut or pastured the plant goes through the cycle shown in the diagram: (1) new growth draws on the stored food; (2) food is manufactured for rapid growth; and (3) surplus food is stored in the roots.

Time of fall cutting or grazing is important. If the plant has only a short growing period before frost and cold weather, its supply of stored food will be used up in making new top growth. Frost and cold weather then stop growth before the plant can rebuild its root reserves.

The following rules are suggested as a guide for fall management of hay and pasture fields:

**New seedings** — Allow from 4 to 6 weeks before frost for legumes to build up reserve food supply. When new seedlings of red clover or alfalfa make very rank growth, careful grazing to leave 6 inches of growth is satisfactory.

**Established stands** — Don't cut or graze alfalfa during the period 4 weeks before the average frost date. Because of their lower growth habit, Empire birdsfoot trefoil and ladino clover can survive under close grazing better than can the upright-growing legumes, but be sure to allow some regrowth before frost. If feed is needed, legume meadows may be grazed after frost in October. Be sure to leave 6 inches of growth for winter protection.

**Ladino Clover** — Orchardgrass pastures should be grazed hard in early October to set back the orchardgrass. Topdress with light application of strawy manure to protect the clover. Timothy and bromegrass are not so competitive toward ladino as is orchardgrass.

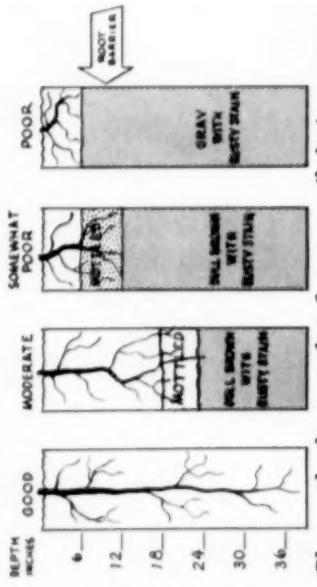
#### What Can Be Grazed in the Fall?

1. Any meadow that will be plowed in the spring.
2. Native pastures.
3. Old stands where legume is thin.
4. Nitrogen-fertilized grass meadows.
5. Empire birdsfoot trefoil or ladino clover when grazed carefully.
- Part of the loss of legumes due to winter-killing and heaving can be traced to the plants going into the winter with a low supply of stored foods.
- Numerous experiments have shown that when legumes are cut during the critical period in the fall, the loss of yield in the next year's hay crop is greater than the extra forage harvested in the fall.

# 1956 Seedlings for Hay, Silage, and Pasture

*Recommendations of the Departments of Agronomy and Plant Breeding*

## SOIL DRAINAGE TYPE



*Choose the legume that fits your soil drainage type.*

## Choose the seeding:

1. That is suited to the way you plan to use it.
2. That contains the legume that has the desired length of life.
3. That is adapted to the drainage conditions of your soil.

Drainage types are shown in the diagram at the left and are described below:

**Good:** Plow layer dry enough to work in early spring. Subsoil seldom too wet during growing season. No limit to root penetration.

**Moderate:** About 20 inches of well-drained soil. Spring work delayed only slightly.

**Somewhat poor:** Plow layer and upper subsoil to 12 inches dry, but lower subsoil wet until late spring. Spring work delayed.

**Poor:** Too wet for regular crop rotation. Mottled layer and sometimes hardpan at plow depth.

**Root Barrier:** The air is cut off for long periods by excess water. Poorly drained soils often have hardpan close to the surface. Some legumes thrive under these conditions; others, such as alfalfa, do not.

## HAY OR SILAGE AND AFTERMATH GRAZING—Alfalfa Mixtures

Soil Drainage Type	Legumes and Grasses	Pounds per Acre *	Notes on Seedings—Varieties, Management, Adaptation	
			Use Certified Seed of Named Varieties	
GOOD TO MODERATE	Alfalfa Timothy	8 6	For top production for 1 to 3 years Good drainage, high lime and fertilizer, intensive management (3 cuts), Du Puits for highest yield; first cut, early June; 2 more cuts at early bloom. Narragansett yield is 10 per cent below Du Puits; may be cut 2 or 3 times.	
MODERATE TO SOMEWHAT POOR	Alfalfa Smooth Brome or Timothy	8 8 6	For general situations for 2 to 5 years Narragansett is first choice except where wilt is severe. Ranger or Vernal for stands to be down 3 or more years where wilt kills alfalfa. Smooth bromegrass is preferred to timothy for stands to be down 3 or more years.	
MODERATE TO SOMEWHAT POOR	Alfalfa Medium Red Clover Ladino Clover Timothy or Smooth Bromegrass	6 2 1 6 8	Enough lime and fertilizer may produce alfalfa where it has failed before. Narragansett is the alfalfa variety for this situation. On the less favorable alfalfa sites, reduce alfalfa to 4 pounds and increase red clover to 4 pounds. Clover competition reduces the alfalfa stand. Smooth bromegrass is preferred to timothy for stands to be down 3 years or more.	
	Alfalfa European Birdsfoot Trefoli Timothy	6 4 6	Try Narragansett alfalfa and European Birdsfoot Trefoli for fields with variable drainage conditions to replace the alfalfa-clover-grass mixture above. Lime and fertilizer for alfalfa.	

## ROTATED PASTURE OR SILAGE—From 2 to 5 Years

GOOD TO SOMEWHAT POOR	Ladino Clover Alfalfa Orchardgrass or Smooth Bromegrass	3 to 6 6 8	A high-yielding mixture for rotated pasture and silage. Use certified Narragansett alfalfa. Seed 6 pounds of alfalfa on soils with good drainage, 3 pounds with moderate drainage to fair drainage. Cut or graze early to retain the palatability of orchardgrass and to maintain ladino. Bromegrass is easier to manage than orchardgrass but less productive in mid-summer.
POOR TO GOOD	Empire Birdsfoot Trefoli Timothy or Smooth Bromegrass	5 to 8 5 8	

## HAY, SILAGE, AND ROTATED OR PERMANENT PASTURE—Birdsfoot Trefoli Mixtures—3 Years or More

European Birdsfoot Trefoli Timothy or Smooth Bromegrass	5 to 8 5 8	Better than red or alsike clover in meadows to be left down 3 or more years on moderate to poorly drained soils. Ready to cut as early as red clover. Well suited for rotational grazing. Hay yield higher than Empire. It establishes quicker and recovers quicker after cutting. See note under Empire on rate of seedling.
	8	European: Better than red or alsike clover in meadows to be left down 3 or more years on moderately to poorly drained soils. Ready to cut as early as red clover. Well suited for rotational grazing. Hay yield higher than Empire. It establishes quicker and recovers quickly after cutting. See note under Empire on rate of seedling.

## GOOD

European Birdfoot Trefoil  
Timothy or Smooth  
Bromegrass

5 to 8  
5  
8

European: Better than red or alsike clover in meadows to be left down 3 or more years on moderate to poorly drained soils. Ready to cut as early as red clover. Well suited for rotational grazing. Hay yield higher than Empire. It establishes quicker and recovers quicker after cutting. See note under Empire on rate of seeding.

**HAY, SILAGE, OR PASTURE—Short-Term Clover Mixture—From 1 to 2 Years**

SPECIAL PURPOSE SEEDINGS			
Poultry Pasture	Ladino Clover Wild White Clover Kentucky Bluegrass	1 1 5	Wild white clover usually volunteers if plants were present before plowing.
Market Hay	Alfalfa	10	Use only on fertile, well-drained soils with adequate lime level. Narragansett or Du Puits is first choice for stands up to 3 years. Ranger or Vernal is preferred for 3- to 5-year stands if bacterial wilt is present.
Cover Crop or Late Fall and Early Spring Pasture	Rye	2 to 3 bushels	Sow after August 1 on moderate to well-drained soil for late fall and early spring pasture. Can be sown up to mid-October as cover crop. Balloons makes rapid fall and spring growth. It is the most dependable seed.
	Domestic Ryegrass	15	Sow at last cultivation in row crops. In a wet fall, ryegrass may help to support equipment such as a corn picker. If sown early, provides fall pasture as well as spring pasture and green manure. Less winter-hardy than rye. Where winter hardiness is desired, purchase more expensive perennial ryegrass.
Summer Pasture or Silage	Sudan Grass	30	A suitable companion crop for hay and pasture seedlings if grazed carefully. Piper first choice or California 23 or Wheeler.
Emergency Hay or Silage	Japanese Millet	16	For poorly drained soils or high elevations. Sudan preferred on soils of good to moderate drainage. Not ready for hay until September when weather is often poor for curing.
For Swampy Fields	Reed Canary Grass	8	Use for long-term stands on land too wet or too often flooded to grow other recommended hay and pasture crops.
Diversion Ditches†	Birdsfoot Trefoil	7 5	For areas such as channels and backslopes which are difficult to seed, double the rate of seeding. After July 1 sow 2 bushels of rye, now when 15 to 18 inches tall; seed birdsfoot and timothy the following spring.
Outlets and Sod Waterways†	Redtop Red Fescue Birdsfoot Trefoil	5 20 7	For soils of high fertility, not droughty or very poorly drained, use 10 pounds of Kentucky bluergrass, 20 pounds of redtop, and 2 pounds of white clover. If area cannot be mowed (near gully bank), use 30 pounds of tall fescue and 7 pounds of birdsfoot trefoil.
Pond Dikes†	Redtop Red Fescue European Birdfoot Trefoil	5 15 10	If pond is completed in September or October, sow 2 bushels of oats per acre and seed Kentucky bluegrass may be substituted for red fescue.

\* Use 25 per cent more seed than recommended if seedbed is poorly prepared. To convert pounds of seed to quarts: Legumes, 2 pounds to a quart. Timothy, 1½ pounds to a quart. Orchard and bromegrass, ½ pound to a quart. **Sudan and Japanese millet**, 1 pound to a quart. **Kentucky bluegrass** and **Redtop**, weight varies.  
† Recommendation by the Soil Conservation Service.

A Publication of the New York State College of Agriculture, a unit of the State University of New York, at Cornell University  
Published by the New York State College of Agriculture at Cornell University, Ithaca, New York. M. C. Bond, Director of Extension. This bulletin is published and distributed in furtherance of the purposes provided for in the Acts of Congress of May 8 and June 30, 1914.

